

### Office Action Summary

**Application No.**

10/560,644

**Applicant(s)**

NEGLE, HANS

**Examiner**

Jaision P. Thomas

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: 20090320
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/29/2009 has been entered.
2. Claims 1-20 are pending. Claims 1,2,6,9-13 are amended. Claims 9-12 are withdrawn. Claims 16-20 are new.
3. Claims 7 and 8 stand rejected under 35 USC 112, 2nd paragraph as lacking antecedent basis.
4. The rejections of Claims 1-4 and 13-15 under 35 USC 102(b) as being anticipated by Negle (EP 1176856) are withdrawn in view of Applicant's amendments.
5. The rejections of Claims 7 and 8 under 35 USC 103(a) as being obvious over Negle (EP 1176856) in view of Allen et al. (US Patent 6541534) are withdrawn in view of Applicant's Remarks.
6. The rejections of Claims 1-4,13 and 14 under 35 USC 102(b) as being anticipated by Moore et al. (US Patent 4219791) are withdrawn in view of Applicant's amendments.
7. Claim 5 stands rejected under 35 USC 103(a) as being unpatentable over Moore et al. in view of Frantz et al. (US Patent 3670091).

8. Claims 7 and 8 stand rejected under 35 USC 103(a) as being unpatentable over Moore et al. in view of Allen et al. (US Patent 6541534).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1,16,18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Olsson et al. (US Patent 4109098).

Olsson teaches a high voltage cable comprised of an inner conductor, an insulation layer, an outer semiconducting layer and an additional semiconducting layer (Cols. 4-5, Claim 1) wherein the outer semiconducting layer has a surface resistivity of  $10^7$  to  $10^9$  ohm/square wherein the outer semiconducting layer has a conducting material comprised of carbon (Claims 5 and 6, Col. 6, lines 14-20).

With respect to the limitations of Claims 18 and 19, the Examiner respectfully submits that the prior art would inherently meet the claimed limitations. Specifically, the

prior art utilizes similar materials produced in a similar manner and would inherently meet the claimed limitations.

12. Claims 1-4,6,16 and 18-20 are rejected under 35 U.S.C. 102(b) as anticipated by Viebranz et al. (US Patent 5756936).

Viebranz teaches a composition that can be used for electrical cable insulation (Abstract) which is comprised of a matrix polymer (Col. 3, lines 57-63) wherein the composition contains microspheres which are conductive or surface coated with a conductive material having diameters ranging from 10 to 500 microns (Col. 3, lines 50-55). The microspheres can be made of glass which can be hollow inside (Col 4, lines 13-15). The composition has a dielectric strength of 3 or greater (Abstract).

With respect to the limitations of Claim 19, the Examiner respectfully submits that the prior art would inherently meet the claimed limitations. Specifically, the prior art utilizes similar materials produced in a similar manner and would inherently be suited for application in DC field control.

13. Claims 1 and 13-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Negle (EP 1176856).

The teachings of Negle are summarized in the Non-Final Rejection dated 4/29/2008 and the Advisory Action dated 12/30/2008. With respect to newly added Claims 16-19, the Examiner respectfully submits that the prior art would inherently meet the claimed limitations. Specifically, the prior art teaches similar components being

used and processed in a similar manner and would inherently possess the claimed characteristics as required by Claims 16-19.

In the alternative, Negle is relied upon as disclosed above, however it does not specifically recite the addition of a second material which increases the electrical conductivity of the composite.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to understand that the presence of microspheres in the composite of Negle which have been indicated as optimizable for changing the dielectric constant of the material (see Advisory Action) would have a direct effect upon the electrical conductivity of the material as dielectric constant is inversely proportional to the electrical conductivity of a material.

14. Claims 1,13,14,16,17,19 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moore et al. (US Patent 4219791).

The teachings of Moore et al. are summarized in the Final Rejection dated 10/30/2008. With respect to newly added Claims 16,17 and 19 the Examiner respectfully submits that the prior art would inherently meet the claimed limitations. Specifically, the prior art teaches similar components being used and processed in a similar manner and would inherently possess the claimed characteristics as required by Claims 16,17 and 19.

In the alternative, Moore et al. is relied upon as disclosed above, however it does not specifically recite the addition of a second material which increases the electrical conductivity of the composite.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to understand that the presence of microspheres in the composite of Moore which have been indicated as optimizable for changing the dielectric constant of the material would have a direct effect upon the electrical conductivity of the material as dielectric constant is inversely proportional to the electrical conductivity of a material.

15. Claim 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Allen et al. (US Patent 6541534).

Moore et al. is relied upon as disclosed above. However, Moore does not teach the use of coated spherical particles as required by Claim 2.

Allen et al. teaches a polyurethane foam for use in automotive applications where hollow microspheres such as glass or polymeric spheres are integrated into a polyurethane foam via coating the spheres with adhesion promoter such as a silane compound (Col. 8, lines 30-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize adhesion promoters such as silane compounds in the foam of Moore et al. to yield a coated spherical particle as required by Claim 2 with the predictable result of achieving better integration of microspheres into a polymeric matrix.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viebranz in view of Frantz et al. (US Patent 3670091).

Viebranz et al. is relied upon as disclosed above. However, Viebranz does not teach the use of spherical particles made of the materials as disclosed in Claim 5.

Frantz et al. teaches a protective coating used for encapsulating electrical components wherein a flexible matrix such as a thermosetting binder contains glass spheres or microballoons. These spheres can be made of glass, polystyrene, acrylonitrile polymers and phenolics (Col. 2, lines 1-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the glass spheres of Viebranz et al. with the spheres of Frantz et al. since substitution of prior art equivalents are within the level of ordinary skill in the art.

17. Claim 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viebranz in view of Allen et al. (US Patent 6541534).

Viebranz et al. is relied upon as disclosed above. However, Viebranz does not teach the use of adhesion promoters as required by Claims 7 and 8.

Allen et al. teaches a polyurethane foam for use in automotive applications where hollow microspheres such as glass or polymeric spheres are integrated into a polyurethane foam via coating the spheres with adhesion promoter such as a silane compound (Col. 8, lines 30-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize adhesion promoters such as silane compounds in the foam of Viebranz et al. to yield a predictable result of achieving better integration of microspheres into a polymeric matrix.

18. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson et al. (US Patent 4109098).

Olsson is relied upon as disclosed above. However, Olsson does not teach a composite material with the specific resistance value as required by Claim 17.

A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see *Titanium Metals Corp. of America v. Banner*, 778F.2d 775,227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.051.

19. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viebranz et al. (US Patent 5756936).

Viebranz is relied upon as disclosed above. However, Viebranz does not teach a composite material with the specific resistance value as required by Claim 17.

A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see *Titanium Metals Corp. of America v. Banner*, 778F.2d 775,227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.051.



20. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (US Patent 4219791).

Moore is relied upon as disclosed above. However, Moore does not teach a composite with the dielectric values as require by Claim 18.

A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see *Titanium Metals Corp. of America v. Banner*, 778F.2d 775,227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.051.

### ***Response to Arguments***

21. Applicant's arguments filed 1/29/2009 have been fully considered but they are not persuasive.

With respect to the rejections over Negle, the Applicants contend that the microsphere alluded to Negle are actually bubbles that are contained in the foam and as the gas level increases in the foam, the dielectric constant decreases. Applicants contend, however, that electrical resistance does not change as the foam is heated and that disagree with the conclusion that "lowering the dielectric constant necessarily implies increasing electrical conductivity of a homogenous or inhomogeneous material..." Further Applicants contend that Negle does not meet the claimed limitations of substantially dissipating surface charge to prevent voltage flashovers.

The Examiner respectfully disagrees and notes that the translation provided indicates a "microsphere" with a "polymer covering" as cited in previous Office Actions.

Insofar as there may be a difference in the interpretation of the prior art translation, the Applicants are encouraged to provide an affidavit definitively clarifying that the prior art does not contain distinct and separate microspheres. The Examiner has concluded that the dielectric constant of a material can be inversely proportional to its electrical conductivity and, while Applicants have traversed this reasoning, they have not provided any rationale as to why this conclusion is incorrect. Thus the Examiner concludes, based on the passages cited from Negle in the previous Actions, that the Negle foam would meet the claimed limitation of adding a second material which increases the electrical conductivity of material (via the lowering of the dielectric constant) as required by the instant claims.

With respect to the rejections over Moore, the Applicants have again traversed the conclusion that lowering dielectric constant necessarily implies raising electrical conductivity and further conclude there is no basis in the reference suggesting that surface charge could be dissipated via the Moore composite. The Applicants also note that the Moore composition is used in AC field control applications.

The Examiner notes that the claims are not limited to AC or DC field control applications and refers remarks above in regards to the Negle reference in regards to the arguments about dielectric constant and electrical conductivity.

With respect to the rejections of Moore in view of Frantz, the Applicants contend that the Examiner has combined non-analogous art.

The Examiner respectfully disagrees and notes the motivation provided in the Final Rejection i.e. substitution of common filler materials for uses in plastic composite

applications are well known and well within the level of the ordinary skill in the art. The claimed limitations would not patentably distinguish the instant claim over the prior art.

With respect to the rejections of Negle in view of Allen and Moore in view of Allen, the Applicants contend that the Examiner has combined non-analogous art.

The Examiner respectfully disagrees and notes the motivation cited in the Non-Final Rejection i.e. the use of adhesion promoters to enhance the bonding between a matrix material and a filler is a well known concept in the prior art for solving the problem of creating a composite wherein the filler is better integrated into a polymeric matrix.

With respect to the Examiner's concerns about allowability of Claim 1 in view of Viebranz et al. (cited above), the Applicants have alleged the prior art composition is used in "medium" voltage devices which encourages field uniformity as opposed charge dissipation and does not insulate to prevent voltage flashover among "the components" as required by Claim 1. The Applicants also note that the disclosed specific resistivity values reported in Viebranz allegedly vary from the instantly claimed composition.

The Examiner respectfully disagrees and notes the instant Specification does not provide a definition of "high voltage" and thus the Examiner concludes that the Viebranz reference is still applicable regardless of terminology. Further, the Examiner does not believe that field uniformity and charge dissipation are mutually exclusive and the Examiner notes that it is well known in the art that whenever a conductive material is added to a matrix, charge dissipation properties are improved greatly. Insofar as the Viebranz reference teaches a device that has multiple parts i.e. a central conductor with

inner and outer sleeves, the Examiner presumes these parts are equivalent to "components" as recited in Claim 1. The Examiner also notes that even if the surface resistivity values are different from those claimed, they are still close enough that one could reasonably expect said materials to have similar properties and characteristics.

### ***Conclusion***

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.
23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./  
Examiner, Art Unit 1796

/Mark Kopec/  
Primary Examiner, Art Unit 1796